

Professor David Hornbeck's Comments

For the past 200 years the Imperial Valley has undergone a profound change. As remote desert inhabited by Native Americans, it became an early corridor connecting a remote Spanish outpost in California to Central Mexico. Under Mexico, the Imperial Valley continued to be used as passageway, as part of the Old Spanish Trail, which connected California to Santa Fe, New Mexico and eastward to St. Louis, Missouri.

With United States acquisition of California and the subsequent Gold Rush, the Imperial Valley continued as an early entry point for settlers and miners who chose to take the southern route into California. Until the Civil War, the Butterfield Stage ran through the valley carrying passengers and mail to and from eastern cities. Cattle were driven from San Diego ranches to winter pastures in the Imperial Valley to take advantage of meadows surrounding a series of seven fresh water lakes fed by the Colorado River. In the 1880s, the Imperial Valley became an important link in the Southern Pacific Railroad's effort to connect Southern California to the Eastern United States.

For much of its early history, the Imperial Valley was a gateway to places further west; the dry desert valley was not seen as a destination suitable for settlement. However, the past 100 years have brought about a profound change, a change that transformed a desert passageway into a dominant agricultural region. For example compare the 1874 map of the Imperial Valley with a 1922 map of the same area (figs. 1 and 2).

This transformation did not occur without difficulty. Diversion of Colorado River water proved to be the key to the agricultural and economic growth of the region. With water, the Imperial and Mexicali Valleys became the preeminent winter vegetable growing region in North America as well as becoming a striking example of how to create and implement irrigation technology.

With water came difficult water right issues in addition to a host of environmental, social, economic and political problems. Many of these early difficulties were overcome; however, recent urban growth in Southern California has led to increased demands for water. Water from the Imperial Valley has become an integral part of solving Californian's need for water along an ever increasing urban coastline.

The relationship between urban demands and rural needs is not new or unique to the Imperial Valley. For the past 100 years California's cities have relied heavily on acquiring and transferring water from rural areas to sustain their growth. While the Imperial Valley is not unique, it does pose a number of intricate yet distinctive interests that need to be satisfied. The problem is not the details of a transfer of water ownership, but rather of competing interests based on local and regional economics, urban and agricultural differences, social and political variations, land ownership and environmental needs, local and international politics and, importantly, the future value of water.

The pressure from competing interests is great, but the history of water movement is replete with unintended consequences. In California, the removal of Tulare Lake,

dredging of the Sacramento/San Joaquin river delta and shrinking of San Francisco Bay are prime examples of unplanned outcomes. More recently, the Marshlands of Mesopotamia, where the first cultivation of wild grains, turned hunter-gatherers into farmers, some 12,000 to 10,000 years ago, has shrunk 90 percent in the past thirty years due to the reallocation and movement of water. As the previous examples suggest, the movement of water from one area to another without appropriate analyses of possible social, economic, and environmental outcomes is to invite significant unintended consequences. See Report on Garden of Eden, 22 March 2003 by UNEP—Exhibit A

No one solution will be perfect for all competing interests, but for a compromise to be forged there needs to be a base of facts upon which to structure long term cooperation. A great deal of the Imperial Valley's geography and history has yet to be documented. However, an understanding of how the valley's geography shifted and changed during the 20th century is crucial to understanding how it exists today. Perhaps more importantly, documenting the valley's land use evolution will provide insights on how to establish the future value of water.

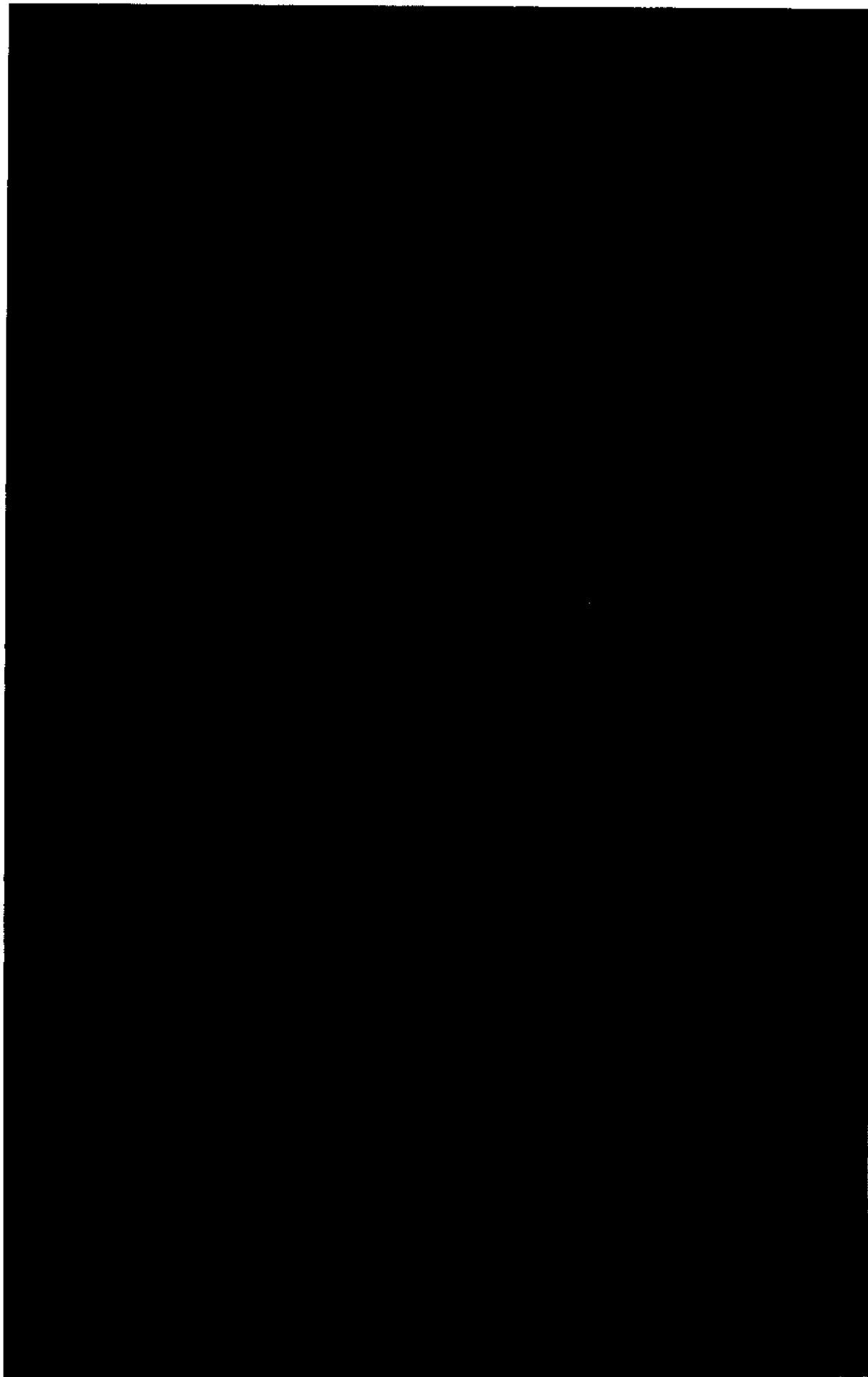
One of the crucial questions which will have to be carefully examined in any analysis of the water transfer is the historical development of Northern Mexico with Colorado River water (Prior to the All American Canal) and post All American Canal with or without a significance water reduction in the Imperial County. There were significant fresh water lakes across the border in Mexico depicted in the early maps of the area, yet today the lakes are gone (figs.3 and 4). What happened to these lakes in terms of water transfer and

the agricultural development of the area? Also, the citizens of Mexico are already expressing a concern about the lining of the All American Canal. (See Exhibit B) The economy of Imperial Valley and Mexicali Valley is so integrated and will become even more integrated over the next fifty years that it is impossible to determine what is a reasonable amount of water for use in the Imperial Valley without a thorough understanding of the historical and growth relationship between the Imperial and Mexicali Valleys.

Sample questions relating to land use evolution in both the Imperial and Mexicali Valleys.

1. What were the early settlement patterns?
2. How was irrigation initiated and sustained?
3. How was water distributed?
4. What was the evolution of the distribution and patterns of canals?
5. What was the evolution of crops?
6. To what extent were crop yields dependent on the introduction of technology?
7. How were irrigation run off/seepage controlled?
8. To what extent were specific crops influenced by soil type?
9. What was the structure of transportation and associated costs?
10. What were the demographic shifts and changes through time?
11. How did the valleys' urban structure develop?
12. What was the economic and political relationship between Mexico and the Valleys?
13. What were the labor requirements and how did it change through time?
14. How were the changing environmental needs met and resolved?
15. How did the valleys' economic growth compare with state and federal growth through time?

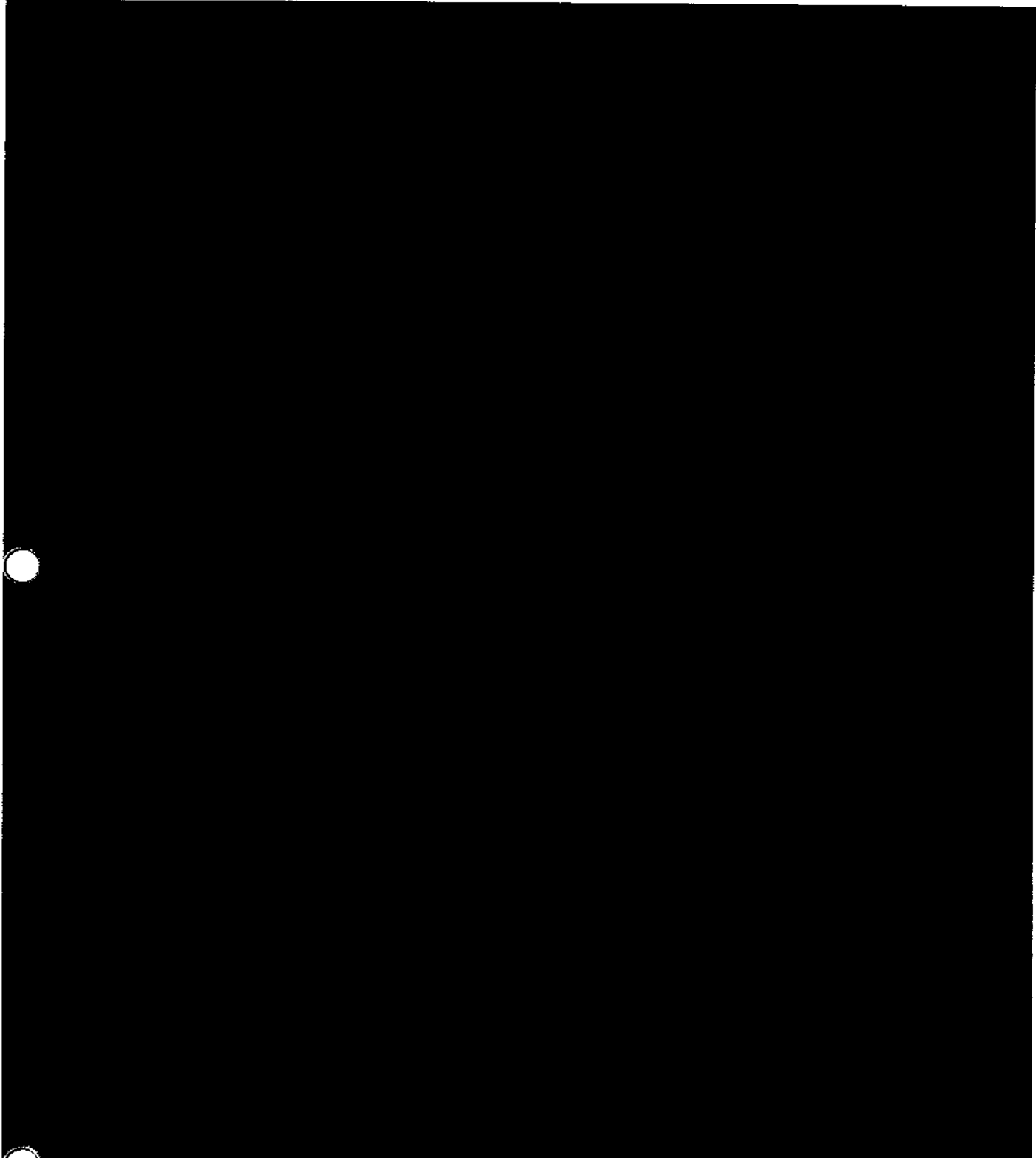
To properly prepare this research will take at least six months.



Map of Mexico and California prior to the creation of the Water Distribution System
in the Imperial Valley (Approximately 1874)

*Source Gray's Atlas — published by Gray and Sons — Philadelphia

Figure 1



Map of Mexico prior to the creation of the Water Distribution System in the Imperial Valley
(Approximately 1874)

*Source Gray's Atlas — published by Gray and Sons — Philadelphia

■ = Rivers and Lake

Figure 4

Map of the probable water resources in the Mexico and Imperial Valley (Approximately 1874)
*Source Gray's Atlas — published by Gray and Sons — Philadelphia

“Garden of Eden” in Southern Iraq Likely to Disappear Completely in Five Years Unless Urgent Action Taken

22 March 2003

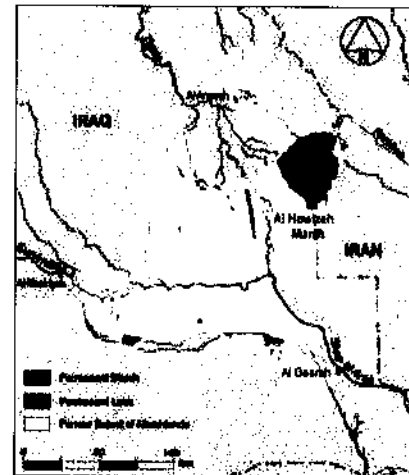
UNEP Says Post-War Rehabilitation Should Include the Marshlands of Mesopotamia for the Sake of People and Wildlife

Kyoto/Nairobi, 22 March 2003 - The Marshlands of Mesopotamia, considered by some to be the Biblical location of the Garden of Eden and known as the fertile crescent, are continuing to disappear at an alarming rate.

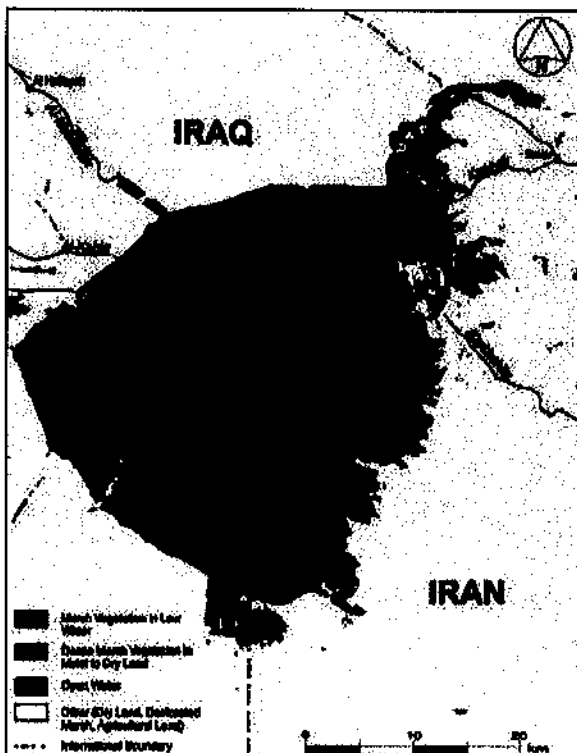
Studies, disclosed today at the 3rd World Water Forum taking place in Kyoto, Japan, indicate that of the 10 per cent of the marshlands left, one third has disappeared in the past two years with many endangered species such as the Sacred Ibis and African darter holding on at a knife's edge.

Two years have elapsed since the United Nations Environment Programme (UNEP) drew the world's attention to the plight of the marshlands and its unique culture, the Marsh Arabs who are the 5,000 year-old heirs of the Babylonians and Sumerians.

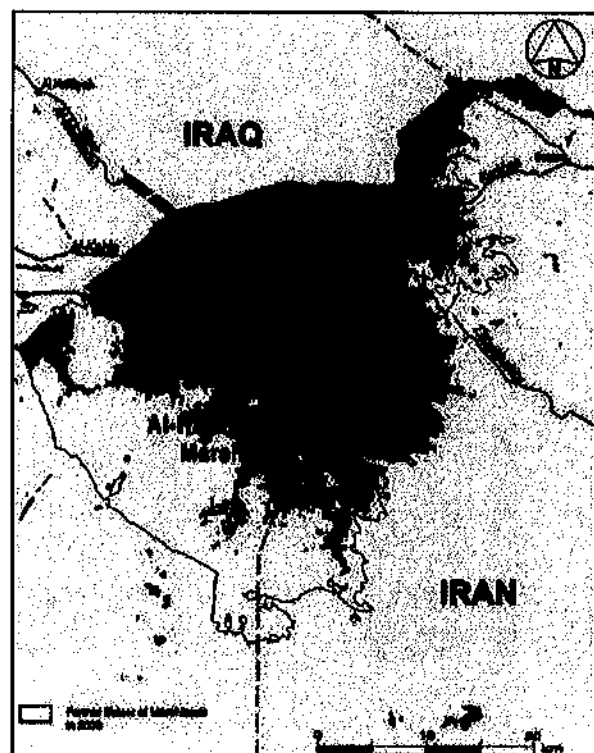
Satellite-based assessment studies, carried out by UNEP's Division of Early Warning and Assessment (DEWA~Europe/GRID-Geneva) and covering a period from the early 1970s to 2000, showed that 90 per cent of the marshlands, also home to rare and unique species and a spawning ground for Gulf fisheries, had



Vanishing Marshlands: 1973 - 2000



Mesopotamian marshlands in 2000



Mesopotamian marshlands in 2002

Hard facts: Analysis of Landsat satellite imagery shows that the surviving Mesopotamian marshlands declined by 30% from 1,084 square kilometers in 2000 to 759 square kilometers in 2002. At this rate of loss, the marshes are likely to totally vanish within the next three to five years.

disappeared.

The new studies show that a further 325 square kilometres have dried out since 2000 leaving just seven per cent of the original area. Unless urgent action is taken to reverse the trend and re-habilitate the marshlands, the entire wetland known as the Hawr Al-Hawizeh in Iraq and Hawr Al-Azim in Iran, are likely to have gone in three to five years.

Klaus Toepfer, Executive Director of UNEP who is attending the Forum, said: "As we mark World Water Day 2003, we are reminded again of the dramatic destruction of the Mesopotamian marshlands and their unique culture and wildlife over the past decade. It is an environmental catastrophe for this region and underscores the huge pressures facing wetlands and freshwater ecosystems across the world".

"We have already lost half of the world's wetlands in the last 100 years, and the continued desiccation of the Mesopotamian marshlands confirms that more decisive and concrete action is needed", he said.

Mr. Toepfer said he hoped that the end of hostilities in Iraq and the rehabilitation of the country would include a full assessment and action plan for the restoration of the marshes.

UNEP, which has successfully carried out environmental assessments and drawn up action plans for the Balkans and more recently Afghanistan and the Occupied Palestinian Territories, stood ready to assist in any project to restore the wetlands.

Mr. Toepfer said such an assessment needed to address all the issues which are potentially impacting on the marshes. These include extensive, internal drainage, projects and dams upstream including those on the Euphrates and Tigris rivers. UNEP believes there is still a last window of opportunity to reverse wetland desiccation and achieve at least partial restoration. In the short term, an emergency release of water from reservoir dams in Iran and Iraq to simulate the seasonal flood is needed.

Iran reacted positively with a limited release of water to the wetlands in March and April 2002 flooding the northern core part. A long-term recovery plan is however needed. This will require a holistic river basin approach based on the ultimate goal of sustaining riverine ecology and in which all Tigris-Euphrates riparian countries share the rivers' waters in a coordinated and equitable manner. An integrated catchment plan would also give priority to allocating an adequate amount of water to the wetlands, while water releases from existing dams can be timed to mimic natural flow patterns and bring the marshlands back to life.

Notes to Editors: The Mesopotamian marshlands are an integral part of the Tigris-Euphrates river basin, which is shared by Iran, Iraq, Syria and Turkey. UNEP first drew the world's attention to the demise of the largest wetland ecosystem in the Middle East Mesopotamian marshlands in May 2001 with hard evidence from satellite imagery capturing the shrinkage of the marshlands' physical extent. The UNEP study revealed that by spring 2000, a one thousand-square kilometre vestige straddling the Iran-Iraq border was all that was left of the extensive wetland complex, which originally covered an area of 15,000 - 20,000 square kilometres.

For More Information Please Contact: Eric Falt, UNEP Director of the Division of Communications and Public Information, on Tel: 254 2 623292, e-mail: eric.falt@unep.org or Nick Nuttall, UNEP Head of Media, on Tel: 254 2 623084 in Kyoto on 81 (0) 90 6946 3372, e-mail: nick.nuttall@unep.org

UNEP News Release

Mexicali, B.C., June 19, 2002

REF: Imperial to San Diego Water Transfer
Oscar Romo P.O. Box 212701
Chula Vista, Ca.
Z.C. 91921

Commissioner John W. Keys, III
US Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Dear Commissioner Keys;

The Economic Development Advisory Council of Mexicali (CDEM), is a non profit organization with the objective to promote actions to reach a high quality of life for the people of Mexicali.

In order to get this purpose, our organization work together with several organizations such the Joint Chambers of Mexicali (CCE); Agricultural Producers; Users of Mexicali's Colorado River Irrigation District No. 14, Research Institutes and ecologist organizations, among others.

This letter is to express our deepest concern about the construction of a parallel canal to the All American Canal, with the intended purpose of transferring surplus water from the Imperial Valley, to the City of San Diego California.

The water designated as "surplus" for the purpose of the transfer, has been feeding aquifers in Mexico for more than fifty years, and under US laws and international legislation, the water is ours. We created inalienable rights over this water, and we will fight for them.

This transfer will disrupt the livelihood of many farmers and their families for both lack of water and the high risk of increased salinity as a result of the intended transfer. Studies show that, without the historical flows into their aquifers, their wells soon will become saline, preventing them to produce any crops, facing permanent unemployment.

We have reviewed the EIR/EIS dated January 18, 2002, and concluded that it fails to consider the required consultation process under several US/Mexico agreements. Our community, considered as a legal user of the Colorado River under the 1944 Treaty, should be consulted and its opinion taken into consideration.

The EIR/EIS does not disclose information about the full environmental, social or economic impacts of this transfer to Mexico, therefore it ignores the good will manifested by the US Government on the La Paz Agreement, the NAFTA Agreement, and the Border XXI Program

On behalf of the people of Baja California, Mexico, we request the immediate cancellation of the proposed transfer, until a comprehensive study is presented to the bi-national community as required by your laws, and alternatives such as the use of recycled water should be studied.

Respectfully yours

Exhibit B

Consejo de Desarrollo Económico	Consejo Coordinador Empresarial
Lic. Federico Díaz Gallego Presidente	Lic. Federico Prieto Gaxiola Presidente
Consejo Agropecuario de Baja California	Comisión Ciudadana de Usuarios del Río Colorado
Ing. Salvador Navarro Pulido Presidente	C.P. Abel Gaspar Navarro Presidente
S.de R.L. Red Mayor del DDR014 Río Colorado	Colegio de la Frontera Norte de Mexicali
Ing. Miguel Soto Avila Presidente	M.C. Alfonso Cortéz Lara Director Regional
Asoc. Ecologica de Usuarios del Río Hardy	
Ing. Francisco Javier Mosqueda Martínez	

ORR/CDEM

Vitae

David Hornbeck, Jr.

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California State University
Northridge, CA 91330
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Ethnicity: American Indian
Date of Birth: 30 August 1940
Place of Birth: Broken Bow, OK
(818) 349-6245 (Home)

PROFESSIONAL PREPARATION

Degrees:

Ph.D.	1974	University of Nebraska
MA	1969	Fresno State University
BA	1968	Fresno State University

Experience:

1958-1966	27th combat unit (58-62) Purchasing Agent, Contract Administrator, Contract Negotiator (62-66), United States Air Force
1966-1968	Map Curator, Fresno State University
1971-1972	Instructor, University of Nebraska
1972-Present	Professor, California State University, Northridge
1984-1988	Director of Business Research, California State University, Northridge

Visiting Appointments:

1974-Summer	University of California, Davis
1979-Spring	University of Arizona
1980-Summer	University of California, Davis
1982-Summer	University of California, Davis

HONORS

1976-1977	Distinguished Teaching Award, CSUN
1981-1983	President, Association of Borderlands Scholars
1982-1983	President, Western Social Science Association

- 1984 Bookbuilder West Book Award for California Patterns: A Geographical and Historical Atlas. Judged best designed, produced, and manufactured book in the Western United States for 1983.
- 1984 Invited participant, Serra Bicentennial Commission pilgrimage to Petra de Mallorca, Spain
- 1985-1987 Member, Advisory Committee, Pacoima Enterprise Zone, appointed by California State Senator, Alan Robbins

COMMITTEES

Department:

- 1973-1975 Member and Chairman, Travel Funds Committee
- 1973-1976 Faculty Advisor, Geography Council
- 1974-1990 Organized and directed yearly job symposia for CSUN geography students
- 1974-Present Career Advisor for CSUN geography students
- 1974-1982 Member, Departmental Graduate Committee
- 1975 Member, Ad Hoc committee to review departmental profile
- 1976-Present Faculty Advisor, Gamma Theta Epsilon
- 1976-Present Founder and Director, Intern Program for Economic Geography Students
- 1981-1982 Chairman, Peer Review committee for Post Tenure Review
- 1984 Member, Sabbatical Leave Committee

School:

- 1975 Member, School of Social and Behavioral Sciences, Ad Hoc Committee on Student Questionnaires
- 1976-1977 Member, Institute of Social and Behavioral Sciences
- 1976-1979 Chairman, Career and Planning committee for School of social and Behavioral Sciences
- 1977-1978 Member, Personnel committee, School of Social

and 1980-1982	and Behavioral Sciences Chairman, 1981-1982
1977-1989	Career Advisor, School of Social and Behavioral Sciences
1978	Organizer and Director, "Careers for Graduates In Social and Behavioral Sciences" at CSUN, with Lee Gassert, Director of Planning and Placement
1983-1985	Member, Urban Studies Advising Committee
1986-1987	Member, Research and Grants Committee
1988-1989	Member, Administrative Personnel Committee

University:

1983-1986	Chairman, Research and Grants Committee
1984	Chairman, Task Force to Evaluate Current CSUN Policies and Incentives toward Research

RESEARCH GRANTS

1970	Nebraska Unicameral Scholarship, \$2,000
1973	Association of American Geographers (Results published in California Geographer) \$500
1974	CSUN Faculty Research Grant Committee (Results published in Social Science Journal)\$500
1974	California State University Chancellor Mini- Grant Program \$1,800
1975	CSUN Faculty Research Grant Committee (Results Published in Journal of Historical Geography) \$1,200
1976	Association of American Geographers (Results Published in Journal of Historical Geography) \$500
1978	CSUN Faculty Research Grant Committee (Results Published in Geographical Review) \$800
1979	CSUN Faculty Research Grant Committee (Results Published in Journal of cultural Geography) \$1,400
1980	CSUN Faculty Research Grant Committee (Results Published in California Patterns) \$900
1983	CSUN Faculty Research Grant Committee (Results Published in California Patterns) \$500

1983-1984	California State Department of Justice (California Land Tenure before 1850) \$47,000
1985	California State Teacher's Retirement Office, \$18,000
1986	California State Lands Division (Ranchos of San Francisco Bay) \$63,000
1985	City of Oxnard (Bus Rider Study) \$8,000
1986	California State Department of Personnel \$37,000
1987	Westlake Village (retail analysis) \$2,000
1988	City of Thousand Oaks, (Analysis of Business Population)\$24,000
1998	A \$250,000 Technology grant from MapInfo Corp. to establish an applied GIS program at CSUN.

PUBLICATIONS

Books, Monographs and Field Guides:

1976	<u>Missions, Mountains and Monterey: A Guide to Coastal California's Changing Landscape.</u> prepared for National Council for Geographic Education, 97 pp., with Phillip Kane.
1979	Cultural Landscapes of the Santa Barbara Coast, 1760-1890. Field Guide for Cukanzus '79. (August, 1979) 49 pp. Maps on California as an Institutional Frontier reprinted in John Fraser Hart, <u>The Rural Landscape</u> , Johns Hopkins Press, 1998
1983	<u>California Patterns: A Geographical and Historical Atlas</u> , Mayfield Publishing Co. Palo Alto, CA, 128 pp. Received Bookbuilders West Award, 1983. 2nd printing, 1987.
1988	Seven Oaks Dam Project Water Systems, prepared for U.S. Army Corps of Engineers, Los Angeles District, 138 pp., with Howard Botts.
1992	<u>California Landscapes</u> , Rowan and Littlefield Press, Lanham, Maryland, 1992, 190 pp., With Martin Kenzer

Articles:

1972	"Processes of Change and the Concept of Acculturation in Historical Geography." Geographical Survey (April, 1972) pp. 24-33.
1975 & 1977	"A Population Map of California, 1798." California Geographer (Fall, 1975) pp. 54-55. Reprinted in Journal of the West, October, 1977.

- 1975 "Hispanic Long-Lots." *Annals*, commentary.
(December, 1975) pp. 115-116.
- 1975 "Agriculture in Hispanic California, 1850."
California Geographer (December, 1975) pp.
52-58, with Mary Tucey.
- 1976 "Anglo Immigration and the Hispanic Town: A
Study of Urban Change in Monterey,
California, 1835-1850." *The Social Science
Journal* (April, 1976) pp. 1-7, with Mary
Tucey.
- 1976 "Casual Remarks by Carl Sauer: Special Session
in Honor of Carl Sauer's fifty years at
Berkeley." Transcribed and edited by David
Hornbeck, *Historical Geography* (Spring, 1976)
pp. 70-76.
- 1976 "Mexican-American Land Tenure Conflict in
California." *Journal of Geography* (April,
1976) pp. 209-221.
- 1976 "California's Landscape Heritage." *Places*
(April, 1976) pp. 53-58.
- 1977 "A Strategy for Career Preparation: A Note to
Graduate and Undergraduate Geography Majors."
Journal of Geography (April, 1977) pp. 151-
152.
- 1977 "Submergence of a People: Migration and
Occupation Structure in California 1850."
Pacific Historical Review (August, 1977) pp.
471-484, with Mary Tucey.
- 1978 & 1979 "Land Tenure and Rancho Expansion in Alta
California 1784-1846." *Journal of Historical
Geography* (December, 1978) pp. 371-390.
Reprinted in *Atlas of California*, Academic
Book Center, 1979.
- 1978 & 1979 "Population of Alta California Missions."
Supplement No. 1 *Historical Geography*
(Spring, 1978). Reprinted in *Atlas of
California*, Academic Book Center, 1979.
- 1978 "California's Cultural Landscapes: A Teaching
Aid." *California Geographer* (December, 1978).
- 1979 "Applied Geography, Is It Really Needed?"
Journal of Geography (March, 1979) pp. 47-49.
- 1979 "The Patenting of California's Private Land
Claims 1851-1855." *Geographical Review*
(October, 1979) pp. 434-448.
- 1980 "Disenos of California." *Map Supplement No. 6.*

Association of Pacific Coast Geographers,
(January, 1980.)

- 1981 "Missions of the Santa Barbara Coast." Field Guide for AAG Meeting, Los Angeles, with Howard Botts and Michael Taugher.
- 1981 Program Abstracts, 1981 AAG meeting, Los Angeles (April, 1981) 256 pp., with Phillip Kane.
- 1981 "President's Message." Frontera, Vol. 6 No.1 PP. 1-3
- 1981 & 1982 "A Report and Assessment of the 1981 AAG Program Abstracts." AAG Newsletter (November, 1981) pp. 14 and 11, with Phillip Kane. Reprinted in Social Science News.
- 1982 Program, Western Social Science Association Meeting, Denver (April, 1982) 126 pp.
- 1982 "The California Indians Before European Contact." Journal of Cultural Geography (Spring/Summer, 1982) pp. 23-39.
- 1983 "The Economic Structure of the California Missions, 1769-1833," In Mission Register Research. Edited by Jeanne Munoz, Ballena Press.
- 1983 "Spanish-Mexican Land Tenure Along South San Francisco Bay." For California State Department of Justice, Sacramento, 85pp.
- 1984 "Economic Climate and Trends of the San Fernando, Simi and Conejo Valleys." Bureau of Business Research Occasional papers, CSUN. 8pp.
- 1984 "Tracing Ontario's Establishment in Maps." Review Essay of R. Louis Gentilcore and C. Grant Head, Ontario's History in Maps. Toronto: University of Toronto Press, 1984. American Review of Canadian Studies (summer, 1984), pp. 227-230.
- 1984 "California Mission Studies Association: A Reality California Mission studies Newsletter Archive. (1984) 2pp.
- 1984 "The Past in California's Landscape." California Mission Studies (1984) pp. 3-7.
- 1984 "Defining Market Trade Areas for Beer Consumption in the San Fernando Valley." Bureau of Business research, Occasional Papers, CSUN 21 pp.
- 1984 "The San Fernando Valley and its Growth

Potential." Bureau of Business Research Occasional Papers, CSUN 10pp.

- 1985 "Early Mission Settlement." Chapter in Some Reminiscences About Fray Junipero Serra. Edited by Msgr. Francis Weber. California Catholic Conference. Kimberly Press, Santa Barbara, pp. 55-66.
- 1985 "Location Analysis for a State Office Building In Southern California." For California State Teacher's Retirement Office, 37 pp.
- 1985 "Brief Assessment of Retailing in Pacoima." San Fernando Valley Series. Bureau of Business Research Occasional Papers, CSUN 21 pp.
- 1985 "An Economic Identity for the San Fernando Valley." Daily News (Feb. 17, 1985). Invited essay.
- 1985 "Pacific Southwest" Editorial Consultant for Atlas of North America: Space Age Portrait of A Continent, National Geographic Society, Washington D.C. PP121-128
- 1985 "Analysis of Bus Ridership." For Southern California Area Transit, Oxnard, 25pp.
- 1986 & 1989 "California Rancheros and the Unlabeled - Who Lived in Arcadia?" Chapter in Early California Reflections. San Juan Capistrano: Orange County Regional Library. Sponsored by grant from National Endowment for the Humanities, pp. 23-36. Reprinted in Noticias, vol 16.
- 1986 "Statistical Analysis of State Employee Vacation and Sick Leave Time." For California State Department of Personnel, Sacramento, 83 pp.
- 1986 "An Analysis of Pacoima's Retail Structure." For Pacoima Enterprise Zone Commission, Pacoima, 15 pp.
- 1987 "The Far West." Chapter in North America: The Historical Geography of a Changing Continent. Edited by Robert Mitchell and Paul Groves. Rowan and Littlefield Press, pp. 279-298.
- 1987 "A Demographic and Statistical Analysis of Westlake Village." For Westlake Village Chamber of Commerce, Westlake Village, 21pp.

- 1987 "A Statistical Analysis of Business and Population." For City of Thousand Oaks Planning Department, 51 pp. With Paul Thielke.
- 1987 "The Ordinary Landscape of Hispanic California." Chapter in Early California Reflections: A Series of Lectures Held at the San Juan Capistrano Branch Orange County Public Library. Edited by Nicholas Magalousis. San Juan Capistrano: Orange County Public Library, pp. 1-13.
- 1989 "Economic Growth and Change at the Missions of Alta California, 1769-1846." Chapter in Columbian Consequences: Archaeological and Historical Perspectives on the Spanish Borderlands West. Volume 1. Edited by David Hurst Thomas. Smithsonian Institution, pp. 303-331.
- 1989 "Alta California: An Overview." Chapter in Columbian Consequences: Archaeological and Historical Perspectives on the Spanish Southwest. Volume 1. Edited by David Hurst Thomas. Smithsonian Institution, pp. 423-433. With Julia Costello.
- 1989 "So You Wanna Go to Graduate School?" Chapter in On Becoming a Geographer. Edited by Martin S. Kenzer. Macmillan Press, pp 1-16.
- 1989 "Institutions as Frontier Linkages." Invited Comments on Denis Shaw, "Northern and Southern Frontiers of European Russia During the Romanov Period (1613-1917)." Soviet Geography (March 1989) pp. 229-230.
- 1989 Working Both Sides of the Street: Consulting and Teaching. Chapter in Applied Geography. Edited by Martin S. Kenzer. Dordrecht, The Netherlands: Kluwer Academic Publishing, pp. 165-172.
- 1989 "Changes in the San Fernando Valley Business Climate." Invited essay in Weil Report. Edited by David Weil. Chatsworth, pp. 1-7.
- 1989 "The Spanish Legacy of North America." Chapter in Landscapes of North America. Edited by Michael Conzen. Chicago: University of Chicago, pp. 117-131.
- 1990 "Historical Geography and a 'Well-Rounded' Education." Past Place (Winter, 1990) pp. 5-8.
- 1990 "Geography in Wonderland?: Comments on Leonard

- Guelke's 'Intellectual Coherence.'" Professional Geographer (May, 1990) pp. 211-214. with Martin S. Kenzer.
- 1990 "A New Nation's Westward Expansion." Chapter in Putting Geography on the Maps. Edited by Joseph P. Beaton. California Geographic Alliance. pp. 69-91.
- 1992 "Peopling of California." Chapter in California Landscapes, Ed Martin Kenzer, Rutgers University Press, New Brunswick, NJ, PP6-18.
- 1993 "Branch Location Decisions" Chapter in New Age Financial Services. Ed. By H. Holtz. New York, NY: John Wiley and Sons.
- 1995 "Historical Geography and a Well-Rounded Education." PastPlace, Winter 1994. Up dated and reprinted in Careers in Historical Geography." Historical Geography Working Papers. Washington, D.C.: Historical Geography Specialty Group, pp. 6-9.
- 1996 "California" Chapter in Encarta (compact disk). Redmond, WA: Microsoft, Inc. 15pp.
- 1997 "The Way We Were: Deployments (and Redeployments) of Time in Human Geography." Chapter in Concepts in Human Geography. Edited by Carville Earle, Kent Mathewson and Martin Kenzer. Lanham, MD: Rowman & Littlefield Publishers, Inc.
- 1998 "Missions of the Santa Barbara Coast: A Field Guide." Prepared for the National Council for Geographic Education, Santa Barbara, CA.
- 1998 "California Cities" Encarta (compact disk) Redmond, WA: Microsoft, Inc. 47pp
- 1998 "The Spanish Legacy of North America." Chapter in Landscapes of North America. Edited by Michael Conzen. Chicago: University of Chicago. Reprinted and revised from 1989 version.
- 1999 "Romance of the Southern California Ranchos." Invited Chapter in Southern California Ranchos. Ed. K. Pauly. Los Angeles, CA: The Westerners.
- 2000 "The Far West 1790-1940." Chapter in North America: The Historical Geography of a Changing Continent. Edited by Robert Mitchell and Paul Groves. Rowan and Littlefield Press, Reprinted and revised from 1987.
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- 2001 "So...You Wanna Go To Graduate School?" in On Becoming a Professional Geographer, Martin Kenzer Editor, The BlackBurn Press, New Jersey. Revised from 1989.
- 2001 "Spatial Database Technology: The Next Wave" Informix World, summer 2001, PP 26-30.

FORTHCOMING:

- "Map Archives in California." Southern California Historical Quarterly. Forthcoming.
- "Northern Mexico 1820-1846." Chapter in Borderlands Atlas. Edited by Norris Hundley. Los Angeles: University of California. With Cynthia Radding. In press.
- "The Far West:1940-1985." Chapter in Geography of North America. Edited by James Wheeler, University of Georgia. In press.

BOOK REVIEWS

- 1973 A Guide to the Historical Geography of New Spain by Peter Gehard, Historical Geography (Spring 1973)
- 1975 Southwest: Three People in Geographical Change 1600-1970, by Donald Meining. Journal of the West (Spring 1975)
- 1975 Los Primeros Pobaldores, by Frances Leon Swadesh. Historical Geography (fall 1975)
- 1976 The Court of Private Land Claims by M. bradfute Professional Geographer (Fall 1975)
- 1977 Discovery in Geography, by Burton O. Witthuhn, Donald P. Brandt, and George J. Demco. Journal of Geography (April 1977)
- 1979 Commercialism on the Frontier, by Robert D. Mitchell. Journal of Historical Geography (October, 1979)
- 1980 European Settlement and Development in North America: Essays on Geographical Change in Honor and Memory of Andrew Hill Clark. Edited by James R. Gibson. Geographical Review (January, 1980)
- 1980 Mirrors of the New World, by J.M.Powell Historical Geography Vol. 10, (1980) PP.24-25.

- 1981 Essays in Population History: Mexico and California, Vol.III by Sherbrne F.Cook and Woodrow Borah. Geographical Review, Vol. 71 #1 pp.121-122.
- 1981 Handbook of the North American Indian. California, by Robert F. Heized (ed.) California Geographer, (1981) pp.94-95.
- 1982 The Natural World of the California Indian, Robert Heizer and Albert Elasser. Geographical Review, Vol. 72, #2 (1982) p. 243.
- 1982 New Spain's Far Northern Frontier: Essays on Spain in the American West, 1540, 1821, by David Weber. Journal of Historical Geography Vol.8 #2 (1982, pp215-216.
- 1982 Studies in Spanish American Population History, by David Weber. Professional Geographer, Vol. 34, # 4, (1982), p.480
- 1983 Spanish and Mexican Records of the American Southwest. By Henry Putney Beers. Historical Geography Spring (1983)

CONTRACT RESEARCH AND TECHNICAL REPORTS

- 1980 "Location Analysis for a Fast Food Restaurant in Barstow, CA." For Jim Rossi Associates, Crestline, 20 pp.
- 1981 "Market Area Analysis of El Toro Restaurant." For M. Fuentes, Owner, Hidden Hills, 22 pp.
- 1983 "A Location Handbook for Branch Managers." For First Interstate Bank, Los Angeles, 25 pp.
- 1984 "Market Analysis of the Capital Needs of the Electronics Industry in the West San Fernando Valley." For Metrobank, Westwood, 27 pp.
- 1985 "Analysis of the Branch Structure and Distribution Network of Cal Fed in San Francisco Bay Area." With Virginia Oliver. For California Federal Savings and Loan, Los Angeles, 201 pp.
- 1985 "An Evaluation and Development of a Statistical Location Model for ATMs." For California Federal Savings and Loan, Los Angeles, 31 pp.
- 1985 "Spatial Pattern and Distribution of Automobile Dealerships in Los Angeles County." For First Interstate Bank, Los Angeles, 72 pp.
- 1986 "Defining Branch Trade Areas for Sacramento County and the San Fernando Valley." For

- First Interstate Bank, Los Angeles, 19 pp.
- 1986 "Cultural Geography of Upper Newport Bay." For Washburn and Kemp, Attorneys at Law, San Francisco, 46 pp.
- 1986 "Historical and Cultural Analysis of Rancho San Antonio." Washburn and Kemp, Attorneys at Law, San Francisco, 53 pp.
- 1986 "Methodology for Defining Bank Regions and Trade Areas in San Diego California." For First Interstate Bank, Los Angeles,
- 1987 "The Concept of Hub and Spoke as a Branch Location Model." For California Federal Savings and Loan, Los Angeles, 45 pp. With Christine Rodrigue.
- 1987 "Retail Sales Forecasting Model." For Evans Furniture, Los Angeles, 26 pp.
- 1988 "A Demographic and Statistical Analysis of East San Fernando Valley." For United Cable, 48pp.
- 1988 "Distance and Vision Class: Bank Trade Area Analysis." For Household Bank, 74 pp.
- 1989 "Branch Site Evaluations, Lansing, Michigan." For BankOne, 93 pp.
- 1989 "Market Segmentation Analysis: San Francisco Bay Area." For United Cable, 38 pp.
- 1989 "Branch Trade Area Definitions in Tucson and Phoenix." For Valley National Bank, 15 pp.
- 1990 "Range, Threshold and Order of Financial Institutions." White Paper prepared for Wells Fargo Bank, San Francisco, CA, 37pp.
- 1991 "Branch Location Analysis: Procedures and Techniques", Prepared for Union Bank, Charlotte, NC. 109pp.
- 1992 "Branch Competitive Analysis", Prepared for Bank One, Columbus Ohio, 147pp
- 1992 "Custom GIS for CitiBank Chicago Market", Prepared for CitiBank, Chicago Ill, Software. Manuals 138pp.
- 1994 "Rationalizing the Branch Network", Prepared for CALFED, Los Angeles, CA, 194pp.
- 1995 "Spatial Data Mining for Financial Institutions", White Paper prepared for Bank of Boston, Boston, Ma. 127pp
- 1996 " Customer Segmentation Model" Research and design for Fleet Bank. Boston Ma, 214 pp.

- 1996 "A Synopsis of Location Models" White Paper prepared for Bank of America, 41pp.
- 1997 "Object Technology and GIS: Future Trends." White Paper prepared for CNC Newspapers, Boston, MA, 68 pp.
- 1997 "Gis and Distribution Planning" White Paper prepared for Chase Manhattan Bank, New York, Ny 49 pp.
- 1998 "Spatial Data and RDMS Applications" White Paper prepared for Bank of Boston, Boston, Ma. 97pp.
- 1998 "Spatial Data Mining and DataMarts", White paper prepared for Chase Manhattan Bank, Ny, 93pp.
- 2000 "Spatial DataMarts Application and Uses" White Paper prepared for Wells Fargo Bank, San Francisco, Ca 103 PP.
- 2001 "Statistical Model for Predicting Household Income for the United States" Technical paper. Equifax, Atlanta GA, 113 pp.
- 2001 "Report on the Historical Land use Practices in the Upper Salinas Valley Prior to 1850", prepared for the Law Offices of Patrick J. Maloney, Alameda, CA
- 2002 "Location Models for Gallery Stores" Hunter Douglas, Princeton, NJ. 58PP.

PAPERS READ AT PROFESSIONAL MEETINGS

Since 1971, I have read 103 papers at geography, history, anthropology, and archaeology meetings, and have chaired 37 paper sessions.

INVITED LECTURES PRESENTED SINCE 1984

- 1984 "The Rise and Decline of the California Missions." Society for California Archaeology, annual meeting, Salinas.
- 1984 "Fray Junipero Serra: The Early Years in California." Lecture to commemorate the bicentennial of Fray Junipero Serra. Moderated by Sister Magdalene Coughlin, President, Mount St. Mary's College. Mount St. Mary's College, Los Angeles.
- 1984 "California Missions and Rancheros: Myths and Reality." In series, California and the West: A Seminar. University of California, Los Angeles.
- 1984 "Geographic Implications of Mission Settlement

in the Life and Times of Serra." The 1984-1985 lecture series honoring the bicentennial of the death of Junipero Serra, OFM. Santa Barbara Mission Archives, Santa Barbara.

- 1985 "A Geographic and Demographic Profile of the California Missions." Junipero Serra: California Trailblazer lecture series. Mission San Juan Capistrano, San Juan Capistrano.
- 1985 "Problems and Solutions for Mapping Historical Data." California Map Society annual meeting, Northridge.
- 1986 "The Ordinary Landscape of Hispanic California: Economic Differences Between Missions and Ranchos." Early California Reflections lecture series. San Juan Capistrano Regional Library. Sponsored by a grant from NEH.
- 1986 "Investment Capital and Economic Growth in Hispanic California 1790-1850." Maynard Geiger Annual Memorial Lecture, Santa Barbara Mission Archives.
- 1987 "Economic Patterns of Hispanic California." San Antonio Archaeology Field Camp, Jolon, CA.
- 1987 "Golden Days of the California Missions." Banquet Speaker, Questers Society National Meeting, Los Angeles, CA.
- 1988 "Destruction of the California Missions." CSUN Faculty Seminar, Northridge, CA.
- 1988 "Economic Growth and Structural Change of the San Fernando Valley." Graduate School of Architecture and Urban Planning, UCLA, Faculty Seminar, Los Angeles, CA.
- 1988 "Mission Economic Growth." Special session on the discovery of the New World. Annual meeting, American Society of Archaeologists, Phoenix, AZ.
- 1988 "Rancho Disenos: The Folk Cartography of Early California." The Huntington Westerners, Los Angeles, CA.
- 1989 "Structural and Economic Growth of Los Angeles From 1850 to 1988." Bureau of Economic Education, California State University System, Ventura, CA.

- 1990 "An Assessment of S.F. Cook's Research on 'The Indian Versus the Spanish Mission.'" Symposium on Spanish Missions and the California Indians. D-Q University, Davis, CA.
- 1990 "Selective Remembrances of California's Past Geography." Keynote Address, Annual Meeting of the California Geographical Society, Los Angeles, CA.
- 1990 "Future Trends in Geographic Information Systems." Business Geographics Conference, Denver, Co. Invited Paper
- 1991 "Mapping Census Data." American Statistical Association, Midwest Regional Meeting, Chicago, IL. Invited Paper.
- 1992 "Branchless Banking: Who Needs Branches With The Internet." Branch Distribution Planning Conference, San Francisco, CA.
- 1993 "Business Application of Geographic Information Systems." GIS Symposium Sponsored by ITN, Sydney, Australia. Invited Paper.
- 1994 "GIS: Applications and Business Uses." MapWorld Conference, Seattle, WA. Invited paper.
- 1995 "Current Career Prospects in GIS." Invited lecture to staff and students. California State University, Department of Geography, Long Beach, CA. Invited paper.
- 1996 "The Romance of Hispanic California: Enduring Myths of a Modern Age." The Negri Academic Lecture Series, Marymount College, Palos Verdes, CA. Invited paper.
- 1997 "Business and Geography: Never the Twain Shall Meet?" Lecture presented to Florida Atlantic University, Department of Geography, Davie FL. Invited paper.
- 1997 "Mission Landscapes." Landscape and Ecology in Southern California Symposium, California State University Northridge. Invited paper.
- 1997 "Economic Structure of San Fernando Mission." 100th Anniversary of Mission San Fernando Conference. San Fernando, CA. Invited paper.
- 1998 "Rancho Days in California." Presented to Docents at Rancho San Antonio State Park, Long Beach, CA. Invited paper.
- 1998 "Spatial DataMarts For Financial Institutions."

Informix World Conference, June 25-29, Seattle, WA.
Invited paper.

- 1998 "The Business Case and the Future of GIS." Opening Address at the Conference on Immerging Technologies in Latin America. Mexico City
- 1999 "Central California Coast: Southern California's Riviera." Welcoming address to the Western Regional Science Association, Ojai, Ca.
- 1999 "Spatial Database Technology: The New Wave" Presented to senior executive staff of Informix Corporation. Palo Alto, Ca.
- 1999 "Images of California Missions: Past, Present, Future." Welcoming address to the California Mission Studies Association meeting, Pasadena, Ca.
- 2000 "California Ranchos and Missions: Images and Perceptions." Symposium on Spain In America Series, Exploring California and The Spanish Frontier:2000. Presented by Multicultural Music and Art Foundation. Northridge Ca. Invited paper.
- 2000 "California Mission Economy, 1779-1835" presented to San Antonio Mission Archeology Group, Jolon, Ca.
- 2001 "Nineteenth Century Agriculture Along the Central California Coast" Invited lecture by the Steinbeck Museum, Salinas California, June 2001.
- 2001 "The Technologies of GIS" Invited lecture by the Southern California Appraisal Institute. June 21,2001 Santa Monica California.
- 2001 "California Mission Demographics and Economy Change, 1779-1835" presented to San Antonio Mission Archeology Group, June 24, 2001,Jolon, Ca.
- 2001 "Spatial Database Technology: The New Wave" Presented to senior executive staff of IBM. Hooksbro, NY January, 2001
- "The Technologies of GIS" Invited lecture by the Southern California Appraisal Institute. June 21,2001 Santa Monica California.
- "Missions of California: Past and Present." Presented to docents of Mission Santa Barbara. A yearly workshop to train docents. May, 2001.
- "Economy and Labor Usage of The California Missions" Presented to the Monterey Historical Society. March, 2001.

"Nineteenth Century Agriculture Along the Central California Coast" Invited lecture by the Steinbeck Museum, Salinas California, June 7th 2001.

2001 "Economy and Labor Usage at The California Missions" Presented to the Monterey Historical Society. March, 2001.

2002 "Myths and Images of the California Missions," Presented to the San Fernando Historical Society. June, 2002.

OTHER

1982-1996 Cofounder Area Location Systems, A GIS Consulting Firm. Served as president and Chairman

1992-1999 Founded Distribution Planning, a yearly symposium for Financial institutions to gather and discuss issues related to banking. Currently 7 of the top 10 U.S. Banks attend, along with 25 others.

1996-Present Consultant to Bank America, Wells Fargo Bank, Chase Manhattan Bank, Citibank, Fleet Bank, Bank Boston, CNC Newspapers, Equifax.

1997 "GIS for Executives." One day workshop presented May 13th In San Francisco, CA and May 20th in New York, NY. Sponsored by the International Management Association, New York, NY.

1992-1999 Served as Chairman of Intersect, Inc. Northbrook, IL.

1999-Present Chairman of Spatial Solutions, Carlsbad Ca.

2000-Present Member of Advisory Board of ErealEstate (EREI.com).

2001 Taught four fourth grade classes at Woodland Hills and Balboa middle schools on "Life at the California Missions."

2001 Invited participant "Leveling the Academic Playing field for Deaf and Hard of Hearing Students" P3 teleconference, Sponsored by NCOD. 90 minute telecast broadcast to 23 universities.

2002 California missions interview for KCSUN radio station

2001 "Missions of California: Past and Present." Presented to docents of Mission Santa Barbara. A yearly workshop to train docents. May, 2001.

PROFESSIONAL PARTICIPATION

Editorships:

1972-1978	Assistant Editor, Historical Geography
1974-1975	Acting Editor, Historical Geography
1976-1981	Founder and Editor, Frontera, Research Digest and Newsletter of the Association of Borderland Scholars
1983-1986	Founder and Editor, California Mission Studies Newsletter
1985-1988	<u>Editor, Economic Climate and Trends: San Fernando Valley.</u> Bureau of business services and Research, CSUN
1988-1991	Editorial Board, California Historical Society

Council Memberships:

1976-1979	Member, Executive Council, Western Social Science Association
1977-1983	Council Member, Association of Borderland Scholars
1984-Present	Member, Executive Council, California Mission Studies Association

PROFESSIONAL ACTIVITIES

1976	Advisor, Planning Committee for the revision of The Atlas of the United States
1976	Organized a two-day field trip for the National Council for Geographic Education national meeting
1977	Organized and chaired a special poster session on "Historical Geography of the West: Settlement and Urban Growth," Association of American Geographers meeting. Summaries published in Historical Geography (Fall, 1977).
1977	Reviewer, grant proposals for National Endowment for the Humanities
1978	Chairman, Search and Screen Committee for Book Review Editor of Social Science Journal
1978-1979	Geography Section Coordinator, Western Social Science meeting, Lake Tahoe, Nevada
1979	Member, organizing committee of Cukanzus '79,

International Conference of Historical Geographers, Los Angeles

1979 Organized and led one-day field trip for Cukanzus '79, Los Angeles

1980-1981 Member, Program Committee, 1981 Association of American Geographers meeting, Los Angeles

1981 Organized and led one-day field trip for Association of American Geographers annual meeting, Los Angeles

1981 Invited member, U.S. Mexico Border Atlas Planning Conference, Santa Monica

1981 Grant Reviewer, Henry W. Bull Foundation

1982 Historical Consultant and Script Advisor, American Film Institute, on film entitled "Californios"

1982 Program Chair and Director, Western Social Science Association meeting, Denver, CO

1983 Chairman, Nominations Committee, Western Social Science Association

1983-Present Consultant, California State Department of Justice on Spanish-Mexican on California land tenure

1983-1984 Member, Visiting Geographical Scientists Program, Association of American Geographers

1985 Historical Consultant, Script Advisor, and participant on NBC special entitled "Father Serra and the West," narrated by Edwin Newman. Broadcast May 19, 1985.

1985 Invited participant, State Historic Preservation Planning conference, Santa Barbara

1985 Consultant to National Geographic Society for publication of The Making of the Far West map

1985 Map interpretation workshop for Public Historians annual meeting, Santa Rosa

1985 Invited participant, conference on "Historical Geography: Prospects and the Future." Organized by Aidan McQuillan, University of Toronto.

1985 & 1986 Program Chair, California Mission Studies Association meetings, San Jose 1985 and Ventura 1986

1985-1988	Grant Reviewer, National Science Foundation
1985-1987	Chairman, Historical Geography Interest Group, Association of American Geographers
1986-1987	Member, Research Committee, United Way, San Fernando Valley
1986	Program Chair, "California Missions" program National Historical Archaeology meeting, Sacramento
1986-1990	Consultant to Washburn&Kemp, Attorneys at Law, on Hispanic land tenure in the West
1987-1988	Consultant to National Geographic Society for Publication of the Historical Atlas of the United States
1990-1995	Grant Reviewer for National Science Foundation
1998-Present	Consultant to Michael Maloney Attorney at Law, on Hispanic Water rights and land use in California

PUBLIC LECTURES

University:

Northern Illinois University, 1975; University of California, Los Angeles, 1978, 1985, 1988; University of Arizona, 1979; University of Wisconsin, 1980 and 1985; University of Illinois, 1980; University of Oklahoma, 1980; Oklahoma State University, 1981; Syracuse University, 1981; Arizona State University, 1981; Toronto University, 1982; University of Texas, El Paso, 1982; University of Chicago, 1982; Loyola-Marymount University, 1984; University of California, San Diego, 1985; University of Southern California, 1986; University of Wisconsin-Whitewater, 1987; Louisiana State University, 1988. University of Arizona, 1992, San Diego State University, 1994. CSU, Long Beach, 1995. Loyola-Marymount University, 1997.

Community:

San Fernando Valley Audubon Society, 1975; San Antonio Archaeology Group, 1978, 1983-1988; Chatsworth Historical Society, 1979 and 1985; Los Angeles Geographical Society, 1981;

Santa Clarita Historical Society, 1981,
Glendale Historical Society, 1982 and 1983;
Northridge Archaeological Research Center,
1982; Westerners, Los Angeles Chapter, 1983;
Santa Barbara Historical Preservation Trust,
1983; Chatsworth Chamber of Commerce, 1986;
Southern California Rotarians, 1986;
Chatsworth Chamber of Commerce Industrial
Luncheon, 1987; Winnetka Chamber of Commerce,
1987; Westerners, Huntington Chapter, 1988,
West Valley Chamber of Commerce, 1990.

RESEARCH IN PROGRESS

Mission Agriculture in Alta California. Data
have been gathered and a monograph is
underway detailing the range of crops, crop
mix, yields, location, regional patterns and
movement of crop surpluses.

Data are being gathered to study the accumula-
tion, circulation, and investment of Hispanic
wealth (capital) in California (1780-1840)
and how it was used by American settlers to
develop a commercial economy after 1850.

Update California Patterns for second edition.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Association of American Geographers
Western Social Science Association
Agricultural History Association
Western Historical Association
Association of Borderlands Scholars
Historical Society of Southern California
Friends of Santa Barbara Mission Archives
Westerners, Los Angeles Corral
California Mission Studies Association
Association of Pacific Coast Geographers
California Council for Geographic Education